

# BUREAU OF ENVIRONMENT CONFERENCE REPORT

**SUBJECT:** NHDOT Monthly Natural Resource Agency Coordination Meeting

**DATE OF CONFERENCE:** January 15, 2020

**LOCATION OF CONFERENCE:** John O. Morton Building

**ATTENDED BY:**

**NHDOT**

Matt Urban  
Sarah Large  
Ron Crickard  
Andrew O'Sullivan  
Kerry Ryan  
Meli Dube  
Joseph Adams

**ACOE**

Mike Hicks  
Rick Kristoff

**EPA**

Jeannie Brochi

**NHDES**

Lori Sommer  
Karl Benedict

**NH Fish & Game**

Carol Henderson

**Consultants/Public  
Participants**

Christine Perron  
Kimberly Smith

**PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:** *(minutes on subsequent pages)*

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*(When viewing these minutes online, click on a project to zoom to the minutes for that project.)*

**NOTES ON CONFERENCE:****Meeting Minutes**

Approved and finalized the October 16, 2019 meeting minutes. Postponed finalizing the December 18, 2019 meeting minutes to the February 19, 2020 meeting in addition to finalizing the meeting minutes from today's meeting the group was in agreement.

**Orford, #40366**

Christine Perron provided an overview of the project site. The project was last discussed at the March 2018 meeting. The project proposes to replace the bridge that carries NH Route 25A over Brackett Brook. The stream comes down a steep hillside immediately upstream from the bridge, with the channel parallel to the roadway. The channel makes a sharp turn to go under the bridge and then turns again just beyond the bridge. The stream continues along the fields of a youth camp before passing under another bridge on the camp's access road. This area experienced two major rain events in July and November of 2017, and much of this route was closed to through traffic after each event due to the extent of damage that occurred. Flooding and subsequent clean up and repairs resulted in substantial disturbance to the channel and banks in the vicinity of the bridge. Photos showing conditions before and after the storms were reviewed.

The existing bridge is a 2-span structure that sits at a 45 degree skew over Brackett Brook. The length measured between abutments along the roadway centerline is 36'-7". This is a Tier 3 stream crossing with a watershed area of approximately 4.2 square miles. A stream assessment was completed after the July 2017 storm, so measurements taken at the site reflect a channel that was already disturbed and modified by cleanup efforts. It was not possible to identify a reference reach within the same stream that was not disturbed and that had similar characteristics as the channel at the crossing. Based on the stream assessment, the approximate average bankfull width is 29 feet, and the entrenchment ratio is 2.1. The stream in the vicinity of the bridge most closely matches a Type B stream system.

The proposed bridge design has not changed from what was presented in March 2018. The purpose of discussing the project again is to discuss the project in the context of the new NHDES wetland rules prior to progressing into final design. Kim Smith provided a summary of the proposed bridge. The proposed design consists of a 57-foot single span with an opening of 37 feet between abutments. This accommodates the 1.2x bankfull width plus 2 feet recommendation of the NH Stream Crossing Guidelines. The low chord of the proposed bridge will match the existing. However, with the larger span and elimination of the pier, the proposed bridge does pass the 100-year storm with over 1 foot of freeboard. To stabilize the stream channel and protect from scour, riprap will be placed across the entire channel at the bridge. The riprap will be embedded to accommodate the placement of 2 feet of natural streambed material over the riprap. During normal flows, the active channel is approximately 10 to 15 feet in width, so there will be a dry area along the channel under the bridge during most flows. U-back wingwall will be used to minimize property impacts.

Two construction methods were considered: phased bridge construction with one-way alternating traffic and accelerated bridge construction with a full roadway closure. Based on feedback from

town officials and public input, the preferred option is to maintain traffic during construction. This will require a slight shift in alignment of approximately 3 feet to the north.

C. Perron reviewed the preliminary stream and wetland impacts, noting that the numbers will likely change slightly during final design. Currently, approximately 450 linear feet of permanent channel and bank impacts are anticipated, as well as less than 3,000 sq ft. of wetland impacts due to the slightly wider roadway slopes. All stream impacts will be located within areas that were previously disturbed during the 2017 storm events.

Geomorphic compatibility of the proposed design was reviewed. The new bridge will minimize the potential for inlet obstruction by providing a single span with a larger opening. The natural alignment of the channel will be maintained. The proposed bridge does accommodate the bankfull width, bankfull depth, and channel slope. However, the entrenchment ratio of 2.1 is not fully accommodated. The proposed bridge will provide an entrenchment ratio of approximately 1.3, which is near the low end of the range for a Type B stream (1.4 to 2.2). Given the substantial disturbance at the site, an entrenchment ratio of 1.3 is likely within the range of more natural conditions. Additional improvements to the crossing include the increased hydraulic capacity, as well as the larger opening and dry bank area for improved wildlife passage.

Specific feedback was requested relative to the need for the project to be approved as an alternative design under the new wetland rules. In addition, when the project was previously discussed in 2018, Lori Sommer had indicated that mitigation would not be required for the permanent stream impacts, and confirmation of that is needed under the new rules.

Karl Benedict commented that he reviewed the project with Seta Detzel, who will be the DES permit reviewer, and Lori Sommer. They are in agreement that the project would be approved as an alternative design because the entrenchment ratio is not fully accommodated. The application materials should document how the proposed bridge improves geomorphic compatibility. It will also be important to note the disturbed conditions of the reference reach and how that relates to the entrenchment ratio, as summarized in today's presentation. K. Benedict also noted that Lori Sommer agreed that the proposed bridge is an improvement and could be considered self-mitigating; therefore, mitigation would not be required.

K. Benedict asked that plantings along the bank be considered in areas that were disturbed by the storm events and now consist of riprap. C. Perron agreed that the project team could look at this during final design.

K. Benedict asked about stormwater treatment. C. Perron replied that there have been discussions with the DOT Water Quality Program Manager to determine the need for treatment. A small vegetated swale may be feasible in one quadrant of the bridge.

Mike Hicks asked the following questions, with responses provided by C. Perron and others in the project team:

Is the project funded by FHWA? Yes.

Are there any concerns with rare species other than northern long-eared bat? No, only the bat will be considered, and the project will be reviewed under the FHWA Programmatic Consultation.

Was a letter sent to the US Coast Guard? No, but NHDOT Bridge Design will send a letter.

Any historic resource concerns? No, Section 106 consultation resulted in a determination of No Historic Properties Affected.

Are there any floodplain impacts? No, there is a FEMA mapped floodplain about 200 feet downstream of the project that will not be impacted. The proposed bridge will pass the 100 year storm.

When will construction take place? The project is currently scheduled to advertise in 2021, with construction in 2022.

*This project was previously discussed at the September 20, 2017 and March 21, 2018 Monthly Natural Resource Agency Coordination Meetings.*